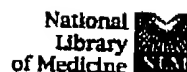


EXHIBIT 3



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1: Keio J Med 1996 Jun;45(2):81-9

Related Articles, Books

Grafting of genetically manipulated cells into adult brain: toward graft-gene therapy.

Uchida K, Toya S.

Department of Neurosurgery, School of Medicine, Keio University, Tokyo, Japan.

Accumulating evidence has shown that functional recoveries in various kinds of animal models of neurodegenerative diseases can be achieved by grafting fetal neurons into the brain. On the basis of these successful results, clinical trials are under way to determine whether human fetal mesencephalic tissue can ameliorate motor functions in patients with Parkinson's disease. Recent autopsy findings of parkinsonian patient implanted with human fetal mesencephalic tissue clearly revealed that the fetal neuronal graft can survive for extended period of time in the human brain and densely reinnervate the surrounding host striatal tissue. It is, however, still important to obtain more practical, effective and ethically justifiable donor material for the future clinical application of the procedures. Desirable properties for the donor cells include long-term survival in the host brain, neuronal cell type for the reconstruction of damaged neural circuits, and susceptibility to genetic manipulation for the practical use. With the development of molecular biology techniques, genetic modification and transplantation of the donor neuronal cells might be a feasible way to cure many kinds of central nervous system diseases toward a "graft-gene therapy".

Publication Types:

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Abstract

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